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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/598,924	09/14/2006	Yuji Furuuchi	117454-003	2128
29175 7590 07/09/2008 BELI., BOYD & LLOYD, LLP P. O. BOX 1135 CHICAGO, IL 60690				
EXAMINER RAMADAN, RAMY O				
ART UNIT 2838		PAPER NUMBER		
MAIL DATE 07/09/2008		DELIVERY MODE PAPER		

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/598,924

Applicant(s)

FURUUCHI ET AL.

Examiner

RAMY RAMADAN

Art Unit

2838

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 September 2006.
2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 6-10 is/are pending in the application.
4a) Of the above claim(s) _____ is/are withdrawn from consideration.
5) ☐ Claim(s) _____ is/are allowed.
6) ☒ Claim(s) 6-10 is/are rejected.
7) ☐ Claim(s) _____ is/are objected to.
8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
10) ☒ The drawing(s) filed on 14 September 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
2) ☐ Notice of Draftperson's Patent Drawing Review (PTO-948)
3) ☒ Information Disclosure Statement(s) (PTO-8508)
Paper No(s)/Mail Date 09/14/2006
4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date _____
5) ☐ Notice of Informal Patent Application
6) ☐ Other: _____

DETAILED ACTION

Claim Objections

1. Claims 7-8 and 10 are objected to because of the following informalities:

The dependency of claims 7-8 and 10 is improper; claim 7 should depend on claim 6, instead of claim 1, claim 8, should depend on claims 6 or 7, instead of claims 1 or 2 and claim 10 should depend on claim 9, instead of claim 4.

Appropriate correction is required.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 6, 8 and 9 are rejected under 35 U.S.C. 102(e) as being anticipated by Applicant Admitted Prior Art (APA).**

As per claim 6, APA discloses and shows in Fig. 7, a protection circuit (1Y) for protecting a battery pack (5) having rechargeable batteries (6) connected in series from overcurrents and overvoltages, the protection circuit (1Y) comprising:

a protection device (2B) having a heating resistor (3) and a fuse element (4) provided on a circuit board; and

sensing means (7) for detecting an overvoltage across any of the batteries (6) in the battery pack (5) and switching a current flowing into the heating resistor (3),

wherein the fuse element (4) is melted in an overcurrent condition, and in an overvoltage condition on any of the batteries (6), and wherein the sensing means (7) switches on the current flowing into the heating resistor (3), thereby causing the heating resistor (3) to generate heat and the fuse element (4) to be melted,

wherein in an overvoltage condition on any of the batteries (6), the sensing means (7) switches on the current flowing into the heating resistor (4), which would implicitly cause a voltage across a predetermined number of the batteries (6) (for example 4 batteries) in the battery pack (5) to be applied to the heating resistor (3) (Applicant's specification, Para [0002]-[0010]).

As per claim 9, APA discloses and shows in Fig. 6, a protection circuit (1X) for protecting a battery pack (5) having rechargeable batteries (6) connected in series from overcurrents and overvoltages, the protection circuit (1X) comprising:

protection devices (2A) (2A comprises two protection devices, each one has a resistor and fuse, and both circuits are connected in parallel as shows in Fig. 6) each having a heating resistor (3) and a fuse element (4) provided on a circuit board; and

sensing means (7) for detecting an overvoltage across any of the batteries (6) in the battery pack (5) and switching a current flowing into the heating resistor (3), wherein

the plurality of protection devices (2A) are connected in parallel, wherein in an overcurrent condition, the fuse element (3) is melted at each protection device, and wherein in an overvoltage condition on any of the batteries (6), the sensing means (7) switches on the current flowing into the heating resistor (4), which would implicitly cause a voltage across a predetermined number of the batteries (6) (for example 4 batteries) in the battery pack (5) to be applied to the heating resistor (3) of each protection device, causing the heating resistor (3) to generate heat, and causing the fuse element (4) to be melted.

Claim Rejections - 35 USC § 103

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. Claim 7 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA.

APA discloses the claimed invention except for a plurality of sensing means. Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device as disclosed by APA to use a plurality of sensing means to sense an overvoltage between batteries, since it has been held that mere duplication of the essential working parts of a device involves only routine skill in the art. *St. Regis Paper Co. v. Bemis Co.*, 193 USPQ 8.

6. Claim 10 is rejected under 35 U.S.C. 103(a) as being unpatentable over APA, in view of Watarai et al. (JP 2003111268 A), hereinafter Watarai.

APA discloses the claimed invention except for that the heating resistor is connected with a rectifier element to prevent conduction resistance from remaining via the heating resistor when an overcurrent has caused the fuse element to be melted incompletely.

However, Watarai discloses and shows in Fig. 1, a secondary battery with overcharge protection circuit comprising: a constant voltage diode (24) (rectifying element) connected to a resistor (23) and a thermal fuse (31) (Abstract).

Watarai is evidence that ordinary workers in the art would find a reason, suggestion or motivation to modify the device as disclosed by APA to include a constant voltage diode connected to the resistor as taught by Watarai to prevent surcharge of a battery and prevent malfunction of the protection device (Machine translation, Para [0009] and [0016]).

Therefore it would have been obvious to one of ordinary skill in the art at the time of the invention was made to modify the device as disclosed by APA to include a constant voltage diode connected to the resistor as taught by Watarai to prevent surcharge of a battery and prevent malfunction of the protection device (Machine translation, Para [0009] and [0016]).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to RAMY RAMADAN whose telephone number is (571) 272-9761. The examiner can normally be reached on Mon-Fri 7:30 am-5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Akm Ullah can be reached on (571) 272-2361. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

7/3/2008

/Gary L. Laxton/
Primary Examiner
Art Unit 2838

/RR/